



# Structurally Optimized Hermetic Seals

## What It Is:

When a mission takes soldiers into a contaminated environment, they can access a complex of tents and passageways that are collectively protected from toxic agents. To help keep this whole complex contaminant-free, we use specialized shelter liners — known as M28 liners — made of a composite material that resists chemical and biological agents. We're looking for a new closure material to join the modular M28 liners with an airtight seal.

## Why It's Needed:

M28 liner sections are currently joined using a triple-track and slider—that is, a three-track linear closure with a mechanical “zipper” that seals the strips together. This closure cannot be heat-sealed directly to the M28 material. The result: a closure that has a stiff and bulky interface, is not flexible in the cold, stretches at high temperatures and collects dirt.

## How It Works:

We'll use the new closure in systems like the toxic-free shelter known as JTCOPS, the Joint Transportable Collective Protection System. Our method of sealing will be resistant to:

- Chemical agents;
- Extremes of temperature;
- Liquid and vapor.

This program will continue through FY2001. No particular closure technology has yet been chosen; we're now collecting off-the-shelf samples and working on test methods. We will draw on the capabilities and expertise of the chemical/biological-clothing group at the Natick Soldier Center; they are developing a similar closure system for interfaces between a suit and the gloves, hood and boots.

## Benefits:

**Improved Performance...**Our optimized seals will easier to apply, more durable and flexible, and less bulky at the liner interfaces.

**Multiple Functions...**The closure could also be applied to tent entryways, air locks and duct connectors used for environmental control.

## Point of Contact:

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**CP DEPMEDS**  
Current Closure



**CP DEPMEDS**  
Entry Airlock

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